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Segment diffusion and flip-flop spin diffusion in entangled polyethyleneoxide melts: A field-gradient NMR diffusometry study

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Abstract

Fringe field nuclear magnetic resonance diffusometry was employed to investigate chain dynamics in entangled polyethyleneoxide melts, taking the intermolecular flip-flop spin diffusion into account. Reptation model predictions for the correspondingly modified time and molecular weight dependences of the effective segment diffusion coefficient are presented and compared with experimental results, showing satisfactory agreement.

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